

What is claimed is:

1. Apparatus for mixing a number of components comprising a vessel for receiving the components, drive means for rotating or oscillating the vessel about an axis to effect mixing of the components within the vessel, and at least one spectroscopic monitoring means for repeatedly scanning the mixture to obtain data for use in monitoring changes in the spectroscopic profile of the mixture as mixing proceeds, the monitoring means being mounted off-axis relative to the axis about which the vessel is rotatable or oscillatable.
2. Apparatus for mixing a number of components, comprising a vessel for receiving the components, drive means for rotating or oscillating the vessel about an axis to effect mixing of the components within the vessel, and at least one spectroscopic monitoring means provided directly or indirectly on-board the vessel for repeatedly scanning the mixture to obtain data for use in monitoring changes in the spectroscopic profile of the mixture as mixing proceeds.
3. Apparatus for mixing a number of components, comprising a mixing zone for receiving the components, means for mixing of the components within the mixing zone, and at least one spectroscopic monitoring means for repeatedly scanning the mixture within or downstream of the mixing zone to obtain and record data for use in monitoring changes in the spectroscopic profile of the mixture as mixing proceeds, means responsive to the monitoring means for modifying the mixing process when the spectroscopic data obtain signifies attainment of a desired level of mixing and data acquisition means for collecting recorded data from the monitoring means, the data acquisition means having a docking station with which the monitoring means can be docked on completion of the mixing process to allow transfer of recorded data from the monitoring means to the data acquisition means.
4. Apparatus for mixing a number of components, comprising a housing having an inlet and an outlet for receiving the components and means for effecting feed of the components from the inlet to the outlet while effecting mixing thereof, means for feeding the components to the inlet while mixing is taking place and means for collecting the mixture from the outlet while mixing is taking place, the housing being provided with at least one near infrared spectroscopic monitoring means for repeatedly scan the mixture within the mixing zone or

downstream to obtain data for use in monitoring changes in the spectroscopic profile of the mixture.

5. A method of mixing a number of components, comprising introducing the components into a mixing vessel, rotating or oscillating the mixing vessel to effect mixing of the components and non-invasively monitoring mixing by collecting spectroscopic data from the mixture during rotation of oscillation of the vessel.

6. A method as claimed in Claim 5 including producing a signal or signals during the mixing process to indicate the mixing status of said components and modifying the mixing process in response to said signal or signals.

7. A method as claimed in Claim 6 in which said modification comprises discontinuing rotation or oscillation of the vessel.

8. A method as claimed in Claim 5 including storing data collected by the monitoring means.

9. A method as claimed in Claim 8 including said data using data storage means which rotates or oscillates with the vessel during the mixing process.

10. A method as claimed in Claim 9 including transferring said data from the data storage means to data acquisition means after rotation or oscillation of the vessel has been discontinued.

11. A method as claimed in Claim 10 in which, after rotation or oscillation of the vessel has been discontinued, the monitoring means is physically relocated to and docked with the data acquisition means to permit data transfer to take place.

12. A method as claimed in Claim 5 including transferring the data from the monitoring means to off-board data storage or data acquisition means during the mixing process.

13. A method as claimed in Claim 5 in which said components include at least one pharmaceutical component.

14. A method as claimed in Claim 5 in which one of the components comprises a lubricant, or a stearate.

15. A method of mixing a number of components, comprising introducing the components into a mixing vessel, rotating or oscillating the mixing vessel to effect the mixing of the components, monitoring the mixing by collecting and analyzing spectroscopic data from the mixture by means of spectroscopic monitoring means which rotates or oscillates with the vessel.

16. A method of mixing a number of components, comprising introducing the components into a mixing vessel which has an axis about which it is substantially symmetrical, rotating or oscillating the mixing vessel about an axis which extends obliquely relative to said vessel axis to effect mixing of the components and monitoring mixing by collecting spectroscopic data from the mixture during rotation or oscillation of the vessel.

17. A method as claimed in Claim 16 in which the vessel comprises an Intermediate Bulk Container (IBC).

18. A method of mixing a number of components, comprising introducing the components into an Intermediate Bulk Container (IBC), rotating or oscillating the IBC to effect mixing of the components and monitoring mixing by collecting spectroscopic data from the mixture.

19. A method of mixing a number of components, comprising introducing at least one of the components into a mixing zone, in a first phase of operation effecting mixing while monitoring the condition of said at least one component by collecting spectroscopic data representative of such condition, on detection that said at least one component has attained a desired condition adding at least one additional component to the mixing zone and, in a second phase of operation, effecting mixing while monitoring the condition of the mixture as supplemented with said additional component by collecting spectroscopic data representative of such condition to determine the attainment of a desired condition of said supplemented mixture.

20. A method as claimed in Claim 19, comprising introducing at least one of the components into a mixing vessel, in a first phase of operation rotating or oscillating the vessel while monitoring the condition of said at least one component by collecting spectroscopic data representative of such condition, on detection that said at least one component has attained a desired condition adding at least one additional component to the mixing vessel and, in a second phase of operation, rotating or oscillating the vessel while monitoring the condition of the mixture as supplemented with said additional component by collecting spectroscopic data representative of such condition to determine the attained of a desired condition of said supplemented mixture.

21. A method as claimed in Claim 19 in which the first phase comprises partial blending of components including at least one pharmaceutical component while the second phase involves the addition of a lubricant component.